

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-20. (Canceled)

21. (Previously Presented) A composition of matter comprising metal oxide colloids having particle sizes ranging from 0.5 - 5 nm, said metal oxide colloids comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water.

22. (Previously Presented) Composition according to claim 21, wherein the metal oxide colloids are monometal-oxide colloids having particle sizes ranging from 0.5 - 5 nm, comprising a metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids.

23. (Previously Presented) Composition according to claim 21, wherein the metal oxide colloids are bimetal-oxide colloids or multimetal-oxide colloids having particle sizes ranging from 0.5 - 5 nm, comprising a plurality of metals of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids.

24. (Previously Presented) Composition according to claim 21, wherein the metal oxide colloids are bimetal-oxide colloids or multimetal-oxide colloids having particle sizes ranging from 0.5 - 5 nm, comprising a metal of a main group of the Periodic Table and one or more metals of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids.

25. (Previously Presented) Composition according to claim 24, wherein said metal of a main group of the Periodic Table is tin.

26. (Previously Presented) Composition according to claim 21, wherein said at least one water-soluble additive capable of stabilizing said metal oxide colloids is selected from the group consisting of amphiphilic betaines, cationic surfactants, anionic surfactants, nonionic surfactants, and water-soluble polymers.

27. (Previously Presented) A process for preparing a composition of matter comprising metal oxide colloids having particle sizes ranging from 0.5-5 nm, said metal oxide colloids comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water, said process comprising hydrolyzing and condensing at least one salt of said at least one metal in an aqueous solution comprising a base in the presence of said at least one water-soluble additive capable of stabilizing said metal oxide colloids.

28. (Previously Presented) The process according to claim 27, which is for the preparation of a composition comprising monometal-oxide colloids, and comprises hydrolyzing and condensing a salt of a metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table in an aqueous solution comprising a base in the presence of a water-soluble additive capable of stabilizing said metal oxide colloids.

29. (Previously Presented) The process according to claim 27, which is for the preparation of a composition comprising bimetal-oxide colloids or multimetal-oxide colloids, and comprises hydrolyzing and condensing salts of a plurality of metals of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table in an aqueous solution comprising a base in the presence of a water-soluble additive capable of stabilizing said metal oxide colloids.

30. (Previously Presented) The process according to claim 27, which is for the preparation of a composition comprising bimetal-oxide colloids, and comprises hydrolyzing and condensing a salt of a metal of a main group of the Periodic Table and a salt of a metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table in an aqueous solution comprising a base in the presence of a water-soluble additive capable of stabilizing said metal oxide colloids.

31. (Previously Presented) The process according to claim 30, wherein said salt of said metal of a main group of the Periodic Table is SnCl_2 or SnCl_4 .

32. (Previously Presented) The process according to claim 27, wherein the water-soluble additive capable of stabilizing said metal oxide colloids is selected from the group consisting of amphiphilic betaines, cationic surfactants, anionic surfactants, nonionic surfactants, and water-soluble polymers.

33. (Previously Presented) The process according to claim 27, wherein the base is an alkali metal carbonate, an alkaline earth metal carbonate, an alkali metal bicarbonate, an alkaline earth metal bicarbonate, an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkali metal phosphate, an alkaline earth metal phosphate, an alkali metal hydrogen phosphate or an alkaline earth metal hydrogen phosphate.

34. (Previously Presented) The process according to claim 33, wherein the base is Li_2CO_3 , Na_2CO_3 , K_2CO_3 , Cs_2CO_3 or MgCO_3 .

35. (Previously Presented) The process according to claim 27, which is conducted at a temperature between 20 and 100°C.

36. (Previously Presented) The process according to claim 35, which is conducted at a temperature between 50 and 90°C.

37. (Previously Presented) The process according to claim 27, which is for the preparation of a composition comprising bimetal-oxide colloids or multi-metal-oxide colloids,

and further comprises choosing the mass ratio of metal salts to control the mass ratio of metals in the bimetal-oxide colloids or multimetal-oxide colloids.

38. (Previously Presented) A process for preparing monometal colloids, bimetal colloids or multimetal colloids each having particle sizes ranging from 0.5 - 5 nm, said process comprising:

- a) preparing a composition comprising monometal-oxide colloids, bimetal-oxide colloids or multimetal-oxide colloids by a process comprising hydrolyzing and condensing at least one metal salt in an aqueous solution comprising a base in the presence of a water-soluble additive capable of stabilizing said monometal-oxide colloids, bimetal-oxide colloids or multimetal-oxide colloids, wherein said monometal-oxide colloids, bimetal-oxide colloids and multimetal-oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water; and
- b) reducing said monometal-oxide colloids, bimetal-oxide colloids or multimetal-oxide colloids.

39. (Previously Presented) The process according to claim 38, which is conducted in the presence of a reduction agent selected from the group consisting of hydrogen, hypophosphite and formate.

40. (Previously Presented) A process for fixing colloids onto solid supports, said process comprising treating solid oxidic or non-oxidic solid materials with an aqueous solution of the colloids, wherein the colloids are metal oxide colloids having particle sizes ranging from 0.5 - 5 nm, said metal oxide colloids comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water.

41. (Previously Presented) A process for fixing colloids onto solid supports, said process comprising preparing colloids by the process according to claim 38, and treating solid oxidic or non-oxidic solid materials with an aqueous solution of the colloids.

42. (Previously Presented) A process for immobilizing colloids, said process comprising incorporating said colloids into sol-gel-materials, wherein said colloids are metal oxide colloids having particle sizes ranging from 0.5 - 5 nm, said metal oxide colloids comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and stabilized by at least one water-soluble additive capable of stabilizing said metal oxide colloids, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water.

43. (Previously Presented) The process according to claim 42, wherein the sol-gel

materials are prepared from gel precursors, which gel precursors are $\text{Si}(\text{OCH}_3)_4$ or mixtures of $\text{Si}(\text{OCH}_3)_4$ and $\text{C}_n\text{H}_{2n+1}\text{Si}(\text{OCH}_3)_3$ ($n = 1$ to 4).

44. (Previously Presented) A process for immobilizing colloids, said process comprising preparing colloids by the process according to claim 38, and incorporating said colloids into sol-gel materials.

45. (Previously Presented) The process according to claim 44, wherein the sol-gel materials are prepared from gel precursors, which gel precursors are $\text{Si}(\text{OCH}_3)_4$ or mixtures of $\text{Si}(\text{OCH}_3)_4$ and $\text{C}_n\text{H}_{2n+1}\text{Si}(\text{OCH}_3)_3$ ($n = 1$ to 4).

46. (Previously Presented) The composition according to claim 21, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water to an extent of up to 0.5 mole of metal per liter of water.

47. (Previously Presented) The process according to claim 27, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water to an extent of up to 0.5 mole of metal per liter of water.

48. (Previously Presented) The process according to claim 38, wherein said monometal-oxide colloids, bimetal-oxide colloids or multimetal-oxide colloids, when in the form

of a colloidal powder, are redispersible in a liquid consisting of water to an extent of up to 0.5 mole of metal per liter of water.

49. (Previously Presented) The process according to claim 40, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water to an extent of up to 0.5 mole of metal per liter of water.

50. (Previously Presented) The process according to claim 42, wherein said metal oxide colloids, when in the form of a colloidal powder, are redispersible in a liquid consisting of water to an extent of up to 0.5 mole of metal per liter of water.

51. (Previously Presented) The process according to claim 27, which further comprises isolating metal oxide colloid powder and subsequently redispersing the metal oxide colloid powder in a liquid consisting of water.

52. (Previously Presented) The process according to claim 38, which further comprises isolating monometal-oxide colloid powder, bimetal-oxide colloid powder or multimetal-oxide colloid powder and subsequently redispersing the monometal-oxide colloid powder, bimetal-oxide colloid powder or multimetal-oxide colloid powder in a liquid consisting of water.

53. (Previously Presented) Composition according to claim 21, which is in the form of a colloidal solution.

54. (Previously Presented) Composition according to claim 21, which is in the form of a colloidal powder.

55. (Previously Presented) Composition according to claim 21, consisting of a colloidal powder consisting essentially only of metal oxide colloids having particle sizes ranging from 0.5 - 5 nm, said metal oxide colloids comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, and at least one water-soluble additive stabilizing said metal oxide colloids, wherein said powder is redispersible in a liquid consisting of water.

56. (Previously Presented) Process of producing a colloidal solution comprising redispersing a composition according to claim 55 into a liquid consisting of water.

57. (Previously Presented) Colloidal solution produced by the process according to claim 56.

58. (New) Composition according to claim 21, wherein all metals therein are selected from the group consisting of Pt, Ru, Sn, Fe and W.

59. (New) Composition according to claim 21, wherein the stabilizer is selected from the group consisting of dimethyldodecylammoniopropane sulfonate, dimethyldodecylammoniopropane carboxylate, $[\text{ClCH}_2\text{CH}(\text{OH})\text{CH}_2\text{N}(\text{CH}_3)_2\text{C}_{18}\text{H}_{37}]^+\text{Cl}^-$, sodium

cocoamidoethyl-N-hydroxy-ethyl glycinate, polyoxyethylenelauryl ether, polyoxyethylenesorbitanmono laurate, polyvinylpyrrolidone, polyethylene glycol, alkylpoly glycoside, dimethyldodecylammonio acetate, 3-(N,N-dimethyldodecylammonio-2-(S)-hydroxy butyrate, poly-L-aspartic acid.

60. (New) A colloidal solution comprising metal oxides, stabilizer and water excluding organic solvents, the metal oxides having particle sizes ranging from 0.5-5 nm, the metal oxides comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, the stabilizer being at least one water-soluble additive capable of stabilizing the metal oxides in the colloidal solution against agglomeration, and said colloidal solution being capable of being lyophilized to a powder that is completely redispersible without agglomeration in a liquid consisting of water in concentrations of up to 0.5 mole of metal per liter of water.

61. (New) A colloidal powder comprising metal oxides and stabilizer, the metal oxides having particle sizes ranging from 0.5-5 nm, the metal oxides comprising at least one metal of groups VIb, VIIb, VIII, Ib or IIb of the Periodic Table, the stabilizer being at least one water-soluble additive capable of stabilizing the metal oxides in a colloidal solution against agglomeration, said colloidal solution comprising metal oxides, the stabilizer and water excluding organic solvents, and said colloidal powder being redispersible without agglomeration in a liquid consisting of water in concentrations of up to 0.5 mole of metal per liter of water.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If entry and consideration of the amendments above requires an extension of time, Applicants respectfully request that this be considered a petition therefor. The Commissioner is authorized to charge any fee(s) due in this connection to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No. 14-1263.